

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 23-53 are presently active in this case. The present Amendment adds Claims 45-53.

The outstanding Office Action objected to the specification and drawings because of informalities. Claim 28 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claims 23-38 were rejected under 35 U.S.C. § 103(a) as unpatentable over Henderson et al. (U.S. Patent No. 6,897,015) in view of Lee et al. (U.S. Patent Publication No. 2004/0038307). Claims 39-42 and 44 were rejected under 35 U.S.C. § 103(a) as unpatentable over Henderson et al. in view of Lee et al. further in view of Chee et al. (U.S. Patent No. 7,226,734). Claim 43 was rejected under 35 U.S.C. § 103(a) as unpatentable over Henderson et al. in view of Lee et al. further in view of Pohl (U.S. Patent No. 5,461,600).

In response to the objection to the specification, the specification is amended to correct “pads 16” to “pads 12.”

In response to the objection to the drawings, the specification is amended to include reference “3” after “biological species” at page 7 so as to identify the discussion in the specification of this element shown in Fig. 1.

In response to the rejection of Claim 28 under 35 U.S.C. § 112, first paragraph, Applicant respectfully points to the specification from page 10, line 18 to page 11, line 16 and specifically page 11, lines 2-4. In view of this description, it is believed that Claim 28 is fully enabled by the specification and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who

will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

In order to vary the scope of protection recited in the claims, new dependent Claims 45-53 are added. New Claims 45-53 find non-limiting support in the disclosure as originally filed, for example at page 1, lines 11-12, 28-29; at page 2, lines 1-2; at page 3, lines 20-22, 30-31; at page 7, lines 25-30; at page 9, lines 3-17; at page 10, lines 18-22; and page 11, lines 17-23 and in Figs. 1-5. Therefore, the changes to the claims are not believed to raise a question of new matter.¹

In response to the rejections of Claims 23-44 under 35 U.S.C. §103(a), Applicant respectfully requests reconsideration of these rejections and traverses the rejections, as discussed next.

Briefly recapitulating, Applicant's invention, as recited in independent Claim 23, is directed to a surface *plasmon microsensor or nanosensor* for chemical or biological species. The surface plasmon sensor includes pads distributed on the surface of a support, the pads including at least one electrically conductive material and configured to immobilize the chemical or biological species. The pads have a dimension less than 1 μm .

Turning to the applied prior art, Henderson et al. discloses a sensor for chemical and biological species including electrically conductive pads distributed on the surface of a support and capable of immobilizing the species. Lee et al. discloses, in the field of protein analysis, diffraction structures comprising *inverted pyramids* of about 0.5 to about 5 microns diameter (see paragraph 192). Neither Henderson et al. nor Lee et al. disclose surface plasmon sensors, as required by Claim 23. All claim limitations must be considered.² Therefore, even if the combination of the Henderson et al. and Lee et al. patents is assumed to

¹ See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

² See MPEP 2143.03

be proper, the combination fails to disclose the claimed invention. Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejections based on these patents.

In addition, the combination of the Henderson et al. and Lee et al. patents also fails to disclose the features of many dependent claims. For example, the combination fails to disclose pads, each with a surface that sustains surface plasmons at a first plasmon resonance wavelength when chemical or biological species are not immobilized on the surface and sustains surface plasmons at a second plasmon resonance wavelength when the chemical or biological species are immobilized on the surface, wherein the first and second resonance wavelengths are shifted from each other by a detectable amount, as required by Claim 45.

The applied prior art also fails to disclose that the surface of each pad sustains *localized* surface plasmons at the first and second plasmon resonance wavelengths, wherein the *localized* surface plasmons propagate on the surface over distances *less than* a wavelength of a light exciting the localized surface plasmons on the surface, as required by Claim 46.

The applied prior art also fails to disclose that each of the pads has a *cylindrical* shape of circular or elliptic section, as required by Claims 48-53, nor the circular section required by Claims 49-51.

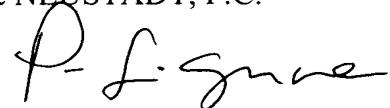
Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 23-53 is earnestly solicited.

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Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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